**We claim:**

1. A method of preparing microparticles, comprising:
(a) preparing a first phase, said first phase comprising a solvent, active agent and a polymer;
(b) preparing a second phase comprising a solvent;
(c) passing said first phase and said second phase through a packed bed apparatus under laminar flow conditions, wherein said method results in the formation of microparticles; and
(d) collecting said microparticles containing said active agent.

2. The method of claim 1, wherein said packed bed apparatus contains packing material selected from the group consisting of metal, ceramic, plastic and glass.

3. The method of claim 2, wherein said packing material is selected from the group consisting of glass and stainless steel.

4. The method of claim 2, wherein said packing material is in the form of spheres, beads, pellets, chips, fibers, sponges and pillows.

5. The method of claim 1, wherein said first phase comprising a solvent is selected from the group consisting of an organic solvent and water.

6. The method of claim 5, wherein said organic solvent is selected from the group consisting of methylene chloride, chloroform, ethyl acetate, benzyl alcohol, diethyl carbonate and methyl ethyl ketone.

7. The method of claim 1, wherein said second phase comprising a solvent is selected from the group consisting of an organic solvent and water.

8. The method of claim 7, wherein said solvent is water.

9. The method of claim 1, wherein said second phase further comprises an emulsion stabilizer.

10. The method of claim 9, wherein said emulsion stabilizer is selected from the group consisting of poly(vinyl alcohol), polysorbate, protein and poly(vinyl pyrrolidone).

11. The method of claim 10, wherein said protein is albumin.

12. The method of claim 1, wherein said second phase further comprises a second solvent.

13. The method of claim 12, wherein said solvent is selected from the group consisting of an organic solvent and water.

14. The method of claim 1, wherein said active agent is selected from the group consisting of antioxidants, porosity enhancers, solvents, salts, cosmetics, food additives, textile-chemicals, agro-chemicals, plasticizers, stabilizers, pigments, opacifiers, adhesives, pesticides, fragrances, antifoulants, dyes, salts, oils, inks, cosmetics, catalysts, detergents, curing agents, flavors, foods, fuels, herbicides, metals, paints, photographic agents, biocides, pigments, plasticizers, propellants, solvents, stabilizers, polymer additives, an organic molecule, an inorganic molecule, antiinfectives, cytotoxics, antihypertensives, antifungal agents, antipsychotics, antibodies, proteins, peptides, antidiabetic agents, immune stimulants, immune suppressants, antibiotics, antivirals, anticonvulsants, antihistamines, cardiovascular agents, anticoagulants, hormones, antimalarials, analgesics, anesthetics, nucleic acids, steroids, aptamers, hormones, steroids, blood clotting factors, hemopoietic factors, cytokines, interleukins, colony stimulating factors, growth factors, growth factor analogs and fragments thereof.

15. The method of claim 1, wherein said polymer is selected from the group consisting of poly(d,l-lactic acid), poly(l-lactic acid), poly(glycolic acid), copolymers of the foregoing including poly(d,l-lactide-co-glycolide) (PLGA), poly(caprolactone), poly(orthoesters), poly(acetals) and poly(hydroxybutryate).

16. A method of preparing microparticles, comprising:
(a) preparing a first phase, said first phase comprising a solvent and an active agent;
(b) preparing a second phase comprising a solvent and a polymer;
(c) preparing a third phase containing a solvent;
(d) combining said first phase and said second phase to create an emulsion;
(e) passing said emulsion through a packed bed apparatus under laminar flow conditions with said third phase, wherein said method results in the formation of microparticles; and
(f) collecting said microparticles containing said active agent.

17. The method of claim 16, wherein said packed bed apparatus contains packing material selected from the group consisting of metal, ceramic, plastic and glass.

18. The method of claim 17, wherein said packing material is in the form of spheres, beads, pellets, chips, fibers, sponges and pillows.

19. The method of claim 18, wherein said packing material is selected from the group consisting of glass and stainless steel.

20. The method of claim 16, wherein said first phase comprising a solvent is selected from the group consisting of an organic solvent and water.

21. The method of claim 20, wherein said first phase includes a water-based solution.

22. The method of claim 16, wherein said second phase comprising a solvent is selected from the group consisting of an organic solvent and water.

23. The method of claim 22, wherein said solvent is an organic solvent.

24. The method of claim 16, wherein said first phase further comprises an emulsion stabilizer.

25. The method of claim 24, wherein said emulsion stabilizer is selected from the group consisting of poly(vinyl alcohol), polysorbate, protein and poly(vinyl pyrrolidone).

26. The method of claim 25, wherein said protein is albumin.

27. The method of claim 16, wherein said second phase further comprises a second solvent.

28. The method of claim 27, wherein said solvent is selected from the group consisting of an organic solvent and water.

29. The method of claim 16, wherein said active agent is selected from the group consisting of antioxidants, porosity enhancers, solvents, salts, cosmetics, food additives, textile-chemicals, agro-chemicals, plasticizers, stabilizers, pigments, opacifiers, adhesives, pesticides, fragrances, antifoulants, dyes, salts, oils, inks, cosmetics, catalysts, detergents, curing agents, flavors, foods, fuels, herbicides, metals, paints, photographic agents, biocides, pigments, plasticizers, propellants, solvents, stabilizers, polymer additives, an organic molecule, an inorganic molecule, antiinfectives, cytotoxics, antihypertensives, antifungal agents, antipsychotics, antibodies, proteins, peptides, antidiabetic agents, immune stimulants, immune suppressants, antibiotics, antivirals, anticonvulsants, antihistamines, cardiovascular agents, anticoagulants, hormones, antimalarials, analgesics, anesthetics, nucleic acids, steroids, aptamers, hormones, steroids, blood clotting factors, hemopoietic factors, cytokines, interleukins, colony stimulating factors, growth factors, growth factor analogs and fragments thereof.

30. The method of claim 16, wherein said polymer is selected from the group consisting of poly(d,l-lactic acid), poly(l-lactic acid), poly(glycolic acid), copolymers of the foregoing including poly(d,l-lactide-co-

glycolide) (PLGA), poly(caprolactone), poly(orthoesters), poly(acetals) and poly(hydroxybutryate).

31. The method of claim 16, wherein said first phase and said second phase create an emulsion in an apparatus selected from the group consisting of a packed bed apparatus, a mixer, a sonicator, a vortexer and a homogenizer.

32. A method of producing microparticles containing biological or chemical agents, comprising:
(a) preparing an emulsion in a packed bed apparatus under laminar flow conditions, wherein said method results in the formation of microparticles; and
(b) collecting said microparticles.

33. The method of claim 32, wherein said emulsion is produced from the mixture of a first and second phase wherein said first and second phase are immiscible with one another.

34. The method of claim 33 wherein said first phase includes a solvent selected from the group consisting of an organic and aqueous solvent.

35. The method of claim 33, wherein said second phase includes a solvent selected from the group consisting of an organic and an aqueous solvent.

36. An apparatus for the preparation of emulsion-based microparticles containing biological or chemical agents comprising (1) a vessel; and (2) packing material situated therein.

37. The apparatus of claim 36, wherein said packing material is selected from the group consisting of metal, ceramic, plastic, and glass.

38. The apparatus of claim 37, wherein said packing material is glass or stainless steel.

39. The apparatus of claim 36, further comprising a material capable of enclosing said packing material within said vessel

40. The apparatus of claim 38, wherein said packing material is spherical beads.

41. The apparatus of claim 40, wherein said spherical beads range in size from 20 to 1000 microns in diameter.